

Claims

1. A method of expressing an antigenic molecule or a part thereof on the surface of a cell, said method comprising introducing a molecule into the cell cytosol by photochemical internalisation, wherein said molecule, or a part thereof, is subsequently presented on the surface of said cell.

2. A method as claimed in claim 1, said method comprising:

contacting said cell with said antigenic molecule or a part thereof and with a photosensitizing agent, wherein said molecule and said agent are each taken up into an intracellular membrane-restricted compartment of said cell; and

irradiating said cell with light of a wavelength effective to activate the photosensitizing agent, such that the membrane of said intracellular compartment is disrupted, releasing said molecule into the cytosol of the cell, without killing the cell,

wherein, said released antigenic molecule, or a part thereof, is subsequently presented on the surface of said cell.

3. The method of claim 1 ~~or claim 2~~ wherein the antigenic molecule is a molecule capable of stimulating an immune response.

4. The method of claim 3 wherein the antigenic molecule is a vaccine antigen or vaccine component.

5. The method of ~~any of the preceding claims~~ wherein the antigenic molecule is a peptide.

6. The method of ~~any of the preceding claims~~ wherein the cell is an antigen presenting cell selected from the

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7. The method of ~~any of the preceding claims~~ wherein the photosensitizing agent is selected from the group comprising porphyrins, phthalocyanines, purpurins, chlorins, benzoporphyrins naphthalocyanines, cationic dyes, tetracyclines and lysomotropic weak bases or derivatives thereof.

8. The method of claim 7 wherein the photosensitizing agent is TPPS_4 , TPPS_{2a} or AlPCS_{2a} .

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9. The method of ¹~~any of the preceding claims~~ wherein the antigenic molecule and/or photosensitizing agent is bound to one or more targeting agents or carrier molecules.

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10. The method of ^{Claim 1} ~~any of the preceding claims~~ wherein said method is carried out in vitro or in vivo.

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11. The method of ^{claim 1} ~~any of the preceding claims~~ wherein the antigenic presentation results in the stimulation of an immune response.

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12. A method of vaccination comprising the method as defined in ^{claim} ~~any one of the preceding claims~~.

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13. A composition for use in expressing an antigenic molecule or a part thereof on the surface of a cell, said composition comprising an antigenic molecule as defined in ^{Claim 1} ~~any one of claims 1 to 5 or claim 9~~ and a photosensitizing agent as defined in ^{Claim 2} ~~any one of claims 2 or 7 to 9~~.

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14. A cell expressing an antigenic molecule, or a part thereof, on its surface, or a population thereof, which

a cell is obtainable by a method as defined in ^{claim 2} ~~any one of~~
~~claims 1 to 12.~~

15. A composition as defined in claim 13 or a cell
5 population as defined in claim 14 for use in therapy.

16. Use of an antigenic molecule and a photosensitizing agent as defined in the ^{claim 2}~~preceding claims~~ in the preparation of a medicament for use in expressing said antigenic molecule or a part thereof on the surface of a cell to stimulate an immune response or for stimulating CTLs.

17. Use of a cell population as defined in claim 14 for
the preparation of a medicament for stimulating an
immune response or for stimulating CTLs.

18. Use as claimed in claim 16 ~~or claim 17~~ wherein said medicament is used in vaccination.

19. Use as claimed in ^{claim 16} ~~any one of claims 16 to 18~~
wherein said medicament is used in the treatment of
viral diseases, cancer or multiple sclerosis.

25 20. A product comprising an antigenic molecule as
defined in ~~any one of claims 1 to 5 or claim 9~~ ^{claim 1} and a
photosensitizing agent as defined in ~~any one of claims 2~~ ^{claim 2}
~~or 7 to 9~~ as a combined preparation for simultaneous,
separate or sequential use in expressing said antigenic
30 molecule or a part thereof on the surface of a cell.

21. A kit for use in expressing an antigenic molecule or a part thereof on the surface of a cell, said kit comprising

35 a first container containing said antigenic
A molecule as defined in ^{claim 1} ~~any one of claims 1 to 5 or claim~~
C. ~~2~~; and

a a second container containing a photosensitizing agent as defined in ~~any one of claims 2 or 7 to 9.~~ *claim 2*

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